

UNDESCRIBED SPECIES OF ERIOPTERINE CRANE-
FLIES FROM THE UNITED STATES AND
CANADA (TIPULIDÆ, DIPTERA),
PART I¹

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The great tribe of Eriopterine Tipulidæ is well developed in the Nearctic fauna and many species remain to be described, especially in the larger and more involved genera. The species discussed at this time were mostly collected by Professor J. Speed Rogers and the writer in the Eastern United States, a few additional forms being from Canada and the Western States, where they were collected by Messrs. Bryant, Crampton, Criddle and Van Duzee. I wish to express my thanks to all of the above named entomologists for this kind coöperation in making known this interesting fauna. Except where stated to the contrary, the types of the novelties are preserved in my collection.

Genus *Erioptera* Meigen

Erioptera (*Erioptera*) *bryantiana* new species.

Size large (wing, ♀, over 7 mm.); general coloration sulphur-yellow, the praescutum and scutum with reddish markings; postnotal mediotergite yellow, the posterior half with two confluent reddish brown areas; halteres and legs yellow; wings fulvous-yellow; ovipositor with the tergal valves strongly upcurved, their margins smooth.

Female. Length about 6.5 mm.; wing 7.2-7.4 mm.

Rostrum and palpi yellow. Antennæ yellow, the outer flagellar segments passing into dark brown. Head pale whitish gray, the center of the vertex vaguely darkened; posterior orbits narrowly yellow; eyes (female) relatively large, contiguous beneath.

Pronotum pale yellow. Mesonotal praescutum chiefly covered by four dull reddish stripes, the lateral margins yellow; tuberculate pits and pseudosutural foveæ pale reddish; scutum yellowish medially, the center of the lobes infuscated; scutellum light yellow; postnotal mediotergite yellow, the posterior half with two confluent oval reddish brown areas. Pleura sul-

¹ Contribution from the Department of Entomology, Massachusetts Agricultural College.

phur yellow, the anepisternum and ventral sternopleurite somewhat more reddish to produce a faint longitudinal striping. Halteres pale yellow. Legs with the coxæ and trochanters pale reddish yellow; legs yellow, the terminal tarsal segments dark brown. Wings with a very strong fulvous yellow suffusion, the base more saturated; stigmal region vaguely darkened; veins dark yellow. Venation: *Rs* long; vein *2nd A* very strongly sinuous.

Abdomen obscure yellow, the tergites narrowly darkened laterally. Ovipositor with the valves yellow, the tergal valves strongly upcurved, the margins smooth.

Habitat.—Alberta.

Holotype, ♀, Bilby, June 19, 1924 (Owen Bryant).

Paratopotype, ♀, June 8, 1924 (Owen Bryant); returned to Mr. Bryant.

Erioptera bryantiana is named in honor of the collector, Mr. Owen Bryant. Although still known only from the female sex, the species appears to be very distinct from all known Nearctic species of the subgenus. The conditions under which this crane-fly were taken have been discussed in another paper on the crane-flies of Alberta (Can. Ent., 59: 214-215; 1927).

***Erioptera (Erioptera) chrysocomoides* new species.**

Male. Length about 3.8-4.2 mm.; wing 4.5-5 mm.

Female. Length about 4.5 mm.; wing 4.5-5 mm.

Generally similar to *E. (E.) chrysocoma* Osten Sacken, differing especially in the structure of the male hypopygium.

Antennal scape dark, the flagellum chiefly brownish yellow. Mesonotum pale reddish brown, with scarcely evident darker markings. Halteres chiefly pale, the base of the stem darkened. Legs with the coxæ and trochanters pale; fore femora chiefly black, the bases narrowly yellow; posterior femora yellow, only the extreme tips darkened; tibiæ dark brown; tarsi brown, the fore tarsi somewhat paler; segments of legs with long conspicuous erect setae. Wings pale yellow, the apical suffusion tending to be much more extensive than in *chrysocoma*, usually involving at least the outer ends of all radial cells beyond the cord; the small dark brown dots arranged about as in *chrysocoma*. Venation: Tip of *Sc*, beyond *R*₂; *Sc*₂ about opposite one-third the length of *Rs*; Anal veins more strongly divergent, vein *2nd A* usually short and nearly straight. Abdomen brownish yellow, the hypopygium still brighter. Male hypopygium large, the structure about as in *chrysocoma* but the details quite distinct. Outer dististyle with the outer arm more dilated. Gonapophyses with the lateral subtending arms much stouter and paler. Basal gonapophyses very different in structure, stout, the apex abruptly narrowed into a black spine, this latter surrounded by numerous setae.

Habitat.—Tennessee.

Holotype, ♂, Allardt, Fentress Co., altitude 1650 feet, July 8, 1924 (J. S. Rogers); Coll. No. 82.

Allotopotype, ♀, July 15, 1924 (J. S. Rogers); Coll. No. 9.

Paratopotypes, several ♂, ♀, June 16–July 15, 1924.

Type returned to Professor Rogers.

The chief characters for the separation of the present species from *chrysocoma* lie in the more divergent anal veins and the structure of the basal gonapophyses of the male hypopygium.

Erioptera (Erioptera) subfurcifer new species.

Male. Length about 4.5 mm.; wing 5.5 mm.

Belongs to the *chlorophylla* group; most closely allied to *E. (E.) furcifer* Alexander, differing especially in the structure of the male hypopygium.

Male hypopygium with the outer dististyle broadly flattened, the apex darkened, the outer apical angle further produced into a point, the outer margin of the blade microscopically serrulate. Inner dististyle slender, profoundly bifid at apex, as in *furcifer*, the outer arm terminating in a smooth, slender, darkened spine, the inner arm entirely pale, more flattened; outer margin of fork of the style with microscopic setulæ. Gonapophyses appearing as broadly flattened dark-colored plates, the outer apical angle produced into a spine, the margins of the plate with numerous microscopic denticles, more abundant and arranged multi-serially along the lateral edge.

E. furcifer has the outer dististyle unusually slender, the apex blackened, truncate and entirely smooth. Inner dististyle with the outer arm more erect, conspicuously hairy. Gonapophyses slender, pale, the apex and outer margin with small weak denticles, the apophyses not at all produced into a spine.

Habitat.—Michigan.

Holotype, ♂, Washtenaw Co., June, 1920 (J. S. Rogers); Coll. No. 126.

Type returned to Professor Rogers.

Erioptera (Ilisia) manitobensis new species.

Male. Length about 4 mm.; wing 5×1.25 mm.

Allied to *E. cinctipennis* Alexander, differing chiefly in the coloration, venation and details of coloration.

Head gray. Antennæ black throughout. Anterior lateral pretergites conspicuously light yellow. Mesonotal praescutum obscure gray, with four brown stripes; tuberculate pits widely separated, small; pseudosutural foveæ conspicuously blackened; interspaces obscure yellow; posterior sclerites of mesonotum grayish brown. Pleura clear light gray. Halteres pale yellow.

Legs with the coxæ gray; trochanters brownish yellow; femora dark brown, the bases of all femora broadly yellowish; tibiae pale brown, the tarsi passing into darker. Wings pale yellowish subhyaline, conspicuously cross-banded with brown, including a broad outer band having its proximal edge at the cord; a more diffuse inner band at the level of the origin of *Rs*, the two areas connected in cells *Cu* and *M*₁; the pale ground-color before and beyond the outer band much broader and more conspicuous than in *cinctipennis*. Venation: *m-cu* nearly its own length before the fork of *M*; Anal veins divergent, vein *2nd A* being short and nearly straight. Abdomen dark brown, with conspicuous short yellow setae. Male hypopygium much as in *cinctipennis*, the inner dististyle with a series of conspicuous black spines along the margin, the outer spine largest, these gradually decreasing in size basally. Outer dististyle slender, the tip obtuse. Gonapophyses relatively wide, the tips obtuse, the margins smooth.

Habitat.—Manitoba.

Holotype, ♂, Aweme, June 24, 1924 (N. Criddle).

Type in the Canadian National Collection.

The strongly patterned wings, with divergent anal veins, and the wide gonapophyses of the male hypopygium offer the chief characters for the separation of the present species from *cinctipennis*.

I am referring the present group of Eriopterine crane-flies to the subgenus *Ilisia*, but with considerable doubt. The relationship to the European *E. melampodia* Loew seems certain and this latter species has been placed in *Ilisia* by Continental students. In some respects, the species of the group agree better with *Psiloconopa* Zetterstedt. There is a conspicuous difference in the course of the anal veins in the different Nearctic species. In some, as *cinctipennis*, vein *2nd A* is long and somewhat sinuous, agreeing with the same characters in the subgenus *Erioptera*; in still other species that are certainly closely allied (as the present species and *E. painteri* Alexander), vein *2nd A* is short and straight, diverging strongly from *1st A*.

Erioptera (*Ilisia*) carbonipes new species.

Closely allied to *E. (I.) cinctipennis* Alexander and formerly confused with this species, differing especially in the entirely black legs and details of structure of the male hypopygium.

Male hypopygium with the inner dististyle very large and flattened, terminating in the usual two points, of which the outer is a blackened spine;

beyond midlength of the outer margin of the blade a conspicuous tubercle bearing a small delicate seta; posterior portion of margin of style with small acute teeth. Gonapophyses unusually wide, appearing as broad flattened plates, the tips obtuse but microscopically denticulate.

In *cinctipennis* the legs are pale, especially the bases of the femora. Male hypopygium with the inner dististyle narrower, the outer margin with large conspicuous teeth. Gonapophyses unusually narrow, especially on the distal third where there are one or two weak denticles on the lower or cephalic margin.

Habitat.—Washington.

Holotype, ♂, Northbend, King Co., July 10, 1920 (E. P. Van Duzee).

Type in the California Academy of Sciences.

The type of *E. carbonipes* was returned to the California Academy of Sciences with the determination "*E. cinctipennis* Alexander." It is now evident that there are several species of the group in western and northern North America.

***Erioptera neomexicana* new species.**

General coloration light gray; femora obscure yellow, broadly darkened before tips; halteres yellow; wings subhyaline; cell M_2 open by the atrophy of basal section of M_3 ; abdomen chiefly yellow; male hypopygium with both dististyles terminal in position, the outer style microscopically spinulose at apex, before tip with a conspicuous black spine.

Male. Length about 3.8 mm.; wing 4.3 mm.

Rostrum and palpi brownish yellow, the latter darkened outwardly. Antennæ dark brown, the basal segments and remainder of head obscured by shellac.

Mesonotum light gray, the praescutum with very narrow brown lateral lines; tuberculate pits black, lying just cephalad of the level of the pseudosutural foveæ; scutum gray; scutellum gray, the margin yellowish; postnotal mediotergite gray, the anterolateral angles conspicuously light yellow. Pleura variegated gray and yellow, the latter coloration forming more or less distinct transverse bands on the anepisternum and sternopleurite, and on the pleurotergite. Halteres yellow. Legs with the fore and middle coxæ dark, the posterior coxæ yellow; trochanters brown, the posterior trochanters yellow; femora obscure yellow, darkened outwardly, the extreme tips narrowly pale; tibiæ brownish yellow, the tarsi darker. Wings relatively narrow, subhyaline, the stigmal region vaguely darkened; veins brown. Venation: Sc_1 ending opposite the fork of Rs , Sc_2 far from its tip, just beyond the origin of Rs ; Rs long, straight; R_2 a little shorter than R_{2+3+4} , placed just beyond the fork of the latter; cell M_2 open by the

atrophy of basal section of *M*₃; *m-cu* just before the fork of *M*; vein *2nd A* short, nearly straight, diverging from *1st A*.

Abdomen chiefly yellow, the sternal incisures darker; subterminal segments more or less darkened medially. Male hypopygium with the dististyles terminal in position, both small; outer style pale at base, more than the distal half blackened; outer margin before tip with a long acute black spine; apex of style densely set with small spines to produce a mace-like appearance. Inner dististyle subequal in length, pale, its tip dusky. Gonapophyses appearing as flattened black blades, the margins smooth, the tips acute.

Habitat.—New Mexico.

Holotype, ♂, Jemez Springs, June.

The strict subgeneric position of *E. neomexicana* may be held as somewhat questionable. The fly is quite distinct from all known regional species.

Genus *Psiloconopa* Zetterstedt

Psiloconopa gaspicola new species.

General coloration dark gray; wings brownish yellow, the stigmal region faintly darker; veins stout; vein *2nd A* unusually short and straight; male hypopygium with the outer dististyle broadly dilated; inner dististyle slender, narrowed to the weakly bifid blackened apex.

Male.—Length about 5.5 mm.; wing 5.2×1.2 mm.

Described from an alcoholic specimen.

Rostrum, palpi and antennae black; flagellar segments oval, decreasing in size outwardly. Head dark gray.

Thorax dark gray, the anterior lateral pretergites and dorso-pleural membrane paler; pseudosutural foveæ and tuberculate pits black. Halteres pale yellow. Legs with the coxæ and trochanters brownish yellow, the former darker at bases; remainder of legs broken. Wings of moderate width, as shown by the measurements, with a brownish yellow suffusion, the base and costal region more yellowish; stigmal region faintly darker; veins stout, dark brown, those in costal region more yellowish. Venation: As in *P. alaskensis* but with the veins beyond cord shorter and stouter, the forks more shallow; vein *2nd A* unusually short and straight, the cell narrow.

Abdomen dark gray. Male hypopygium almost as in *alaskensis*, the outer dististyle broadly dilated; inner dististyle slender, yellow, the apex blackened and weakly bifid, gently curved to an acute point.

Habitat.—Quebec.

Holotype, alcoholic ♂, Gaspé Peninsula, south shore, June 26–July 1, 1928 (G. C. Crampton).

The discovery of a species of this otherwise essentially arctic and western group of crane-flies in the Gaspé region is of especial interest. A similar distribution in the flora of this non-glaciated portion of eastern Canada is now relatively well-known through the researches of Professor M. L. Fernald and others. *Psilomonopa gaspicola* is closely allied to the Alaskan *P. alaskensis* (Alexander), differing especially in the coloration of the wings and in slight details of venation and structure of the male hypopygium.

Genus *Melophilus* Curtis

Molophilus laricicola new species.

General coloration reddish brown; antennæ (male) of moderate length only, if bent backward extending about to the base of the abdomen; femora yellow, the tips broadly blackened; tarsi black; male hypopygium with the mesal lobe of basistyle set with elongate spines that merge into setae; both dististyles narrow, pale basally.

Male.—Length about 4 mm.; wing 5–5.2 mm., antennae about 2 mm.

Female.—Length about 4.5–5 mm.; wing 5.5–6 mm.

Rostrum and palpi brownish black. Antennæ of moderate length, in male, if bent backward, extending about to the base of the abdomen; scape yellow; flagellum dark brown; flagellar segments elongate, with a dense white pubescence and slightly longer scattered verticils. Head ochreous.

Mesonotum reddish brown, the lateral margin of the praescutum and the pretergites pale yellow; setae of interspaces very small; median region of scutum and base of scutellum medially slightly plumbeous. Pleura reddish yellow. Halteres pale. Legs with the coxæ and trochanters concolorous with the pleura; femora yellow at base, the tips broadly blackened, this most extensive on the fore femora where about the outer fourth is included, least extensive on the posterior femora where only the extreme tips are darkened; tibiæ brown, the tips dark brown; tarsi black. Wings with a yellow tinge, the base and costal region somewhat brighter; veins darker yellow than the ground-color; macrotrichia dark brown. Venation: Vein 2nd *A* long and gently sinuous.

Abdominal tergites brown, paler laterally, the sternites more uniformly pale; hypopygium yellow. Male hypopygium with the mesal lobe of basistyle relatively small, the spines unusually long and setiform, those on margin passing into delicate setae; the blackened spines and spinous setae number about fifteen. Both dististyles pale except at tips; outer dististyle nearly glabrous, narrow; inner style narrow, produced into a long, darkened apical point that bears a few scattered setigerous punctures. Aedeagus elongate, in slide mounts extending caudad beyond the level of the other elements of the genitalia.

Habitat.—New York.

Holotype, ♂, Canada Lake, Fulton Co., altitude 1700 feet, June 25, 1928 (C. P. Alexander).

Allotopotype, ♀.

Paratopotypes, 10 ♂ ♀.

Molophilus laricicola is readily told from all other similar species of the *gracilis* group, *pubipennis* subgroup, by the length and structure of the antennæ.

This interesting species occurred in a small sphagnum bog where the forest cover consisted of black spruce, balsam and larch; an abundance of *Ledum*, *Aronia* and *Viburnum cassinoïdes*; and the ground cover, besides the dominant sphagnum, included an abundance of pitcher-plants and dwarf smilacina. Bog crane-flies that were associated with this species at this date included *Limonia (Dicranomyia) profunda* Alexander, *Pseudolimnophila inornata* Osten Sacken, *Limnophila laricicola* Alexander and *Erioptera chrysocoma* Osten Sacken.

***Molophilus huron* new species.**

Male.—Length about 4 mm.; wing 4.8–5 mm.

Female.—Length about 5 mm.; wing about 5.5 mm.

Belongs to the *gracilis* group, *pubipennis* subgroup; closely allied to *M. fultonensis* Alexander, differing especially in the structure of the male hypopygium.

Rostrum and palpi black. Antennæ (♂) elongate, if bent backward extending to about opposite one-fourth the length of the abdomen; flagellum dark brown. Mesonotum reddish brown, the humeral region more yellowish; pretergites pale yellow; remainder of mesonotum reddish brown. Pleura reddish brown to slightly plumbeous. Halteres dusky, the stem yellow. Wings yellow, the vestiture dense, dark brown, including the costal fringe in both sexes. Abdomen dark brown, the hypopygium obscure brownish yellow. Male hypopygium with the spines of the mesal lobe of basistyle very short and stout, peg-like, the coarse marginal setae distinct and not tending to merge into spines. Outer dististyle unusually broad, in general form rectangular, the inner lateral angle produced laterad into a short spine; surface of style with microscopic setulae. Inner dististyle rather broadly expanded, produced in a slender dark spine, this less elongate than in *fultonensis*.

Habitat.—Michigan.

Holotype, ♂, Gogebic Co., August 15, 1920 (J. S. Rogers); Coll. No. 100.

Allotopotype, ♀, August 16, 1920 (J. S. Rogers); Coll. No. 107.

Paratopotypes, several ♂ ♀, July 29–August 16, 1920.

Type returned to Professor Rogers.

Molophilus paludicola new species.

Male.—Length about 3–3.2 mm.; wing 3.5–4 mm.

Female.—Length about 4.5 mm.; wing 4.8–5 mm.

Belongs to the *gracilis* group, *pubipennis* subgroup; allied to *M. fultonensis* Alexander and *M. huron* new species, but much smaller, especially in the male sex, and showing slight differences in the structure of the hypopygium.

Rostrum, palpi and antennal flagellum dark brown; scape obscure yellow; flagellar segments elongate-fusiform, with long, outspreading pale setæ; antennæ (♂) elongate, the segments a little shorter than in *fultonensis*. Head chiefly dark gray, the front and occiput more ochreous.

Posterior pronotum and anterior lateral pretergites pale yellow. Mesonotum and pleura reddish gray, the humeral region of praescutum brighter. Halteres pale, the knobs slightly infuscated. Legs with the coxæ and trochanters yellow, the fore coxæ a little darker; femora testaceous basally, the tips broadly dark brown; tibiæ obscure brownish yellow, the tips narrowly darkened; tarsi dark brown. Wings with a pale brownish suffusion, the base and costal region more yellowish. Macrotrichia of wings dark, including the costal fringe in both sexes, long and conspicuous. Venation: R_2 and $r-m$ in alignment; R_{2+3} and R_{4+5} subequal in length; vein 2nd A relatively short, ending opposite or just beyond the caudal end of $m-cu$.

Abdomen dark brown, the genital segments in both sexes brighter. Male hypopygium with the mesal lobe of basistyle set with unusually small black spines, much smaller than in *pubipennis* and *fultonensis* but quite similar to those of *huron*. Dististyles broadly flattened, the inner lateral angle of each produced strongly laterad into a slender chitinized black point.

Habitat.—Massachusetts.

Holotype, ♂, in boggy meadow near Amherst, altitude 275 feet, July 25, 1928 (C. P. Alexander).

Allotopotype, ♀, pinned with male.

Paratopotypes, 1 ♂, 1 ♀, July 15, 1928 (C. P. Alexander), mounted on same point.

Several of the species of the *pubipennis* subgroup in north-eastern North America are becoming increasingly difficult of separation, especially those forms with very elongate antennæ in the male sex and a dark costal fringe in the female. These species are *M. fultonensis* Alexander, *M. huron* new species and

M. paludicola new species. The distinctions between the first two larger species have been given under the description of *huron*. *M. paludicola* is most similar to *huron*, differing in the small size, especially of the male, venation, as the shorter 2nd anal vein, and slight differences in the antennæ and hypopygium.

THE LIST OF OHIO LEAFHOPPERS

Our veteran entomologist, Prof. Herbert Osborn, has just added another important publication to his long list of valuable papers on Cicadellidæ. This one, "The Leafhoppers of Ohio," published in the Ohio State University Bulletin, Vol. XXXII, No. 27, May 31, 1928, is quite characteristic of his previous work, particularly where he is individual author. He has been rather conservative in application of some of the latest taxonomic work and has only applied such where it seemed advisable. His profusion of good text illustrations makes it particularly handy for the non-specialist. An interesting feature is the appended check list of The Ohio Leafhoppers, corresponding to the Van Duzee check list in numeration. As a whole it is a very neat, precise and useful publication. It is just one more block added to the foundation of cicadellid knowledge, just one more volume of useful cicadellid literature and ready reference for the student interested in the distributions of United States Cicadellidæ.—

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